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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,734	05/08/2001	Dennis Kwan	04939P001	3654

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EXAMINER

MURPHY, RHONDA L

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/851,734	Applicant(s) KWAN, DENNIS	
	Examiner Rhonda L Murphy	Art Unit 2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 19-31 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/16/02</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The protocol stack layers shall be designated as "RF 160", "BB 150", "LC 140", and "LM 130" on page 3, paragraph 5; the baseband layer shall be designated as "950" on page 12, paragraph 29; Figure "2b" shall be designated as "7b" on page 14, paragraph 34; and the clock signal as "674" on page 16, paragraph 38. In addition, the disclosure does not contain a detailed description of Fig. 10.

Appropriate correction is required.

Claim Objections

2. Claims 4 and 25 are objected to because of the following informalities: Claim 4 duplicates "look-up table" and shall be deleted. Claim 25 shall be dependent upon claim 23. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7 and 20-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Weaver (US 6,526,066).

Regarding claims 1,7,20 and 26, Weaver teaches a system comprising a finite state machine means (Fig. 3) having a plurality of states interconnected through a plurality of events (Fig. 4), wherein certain states and events are implemented in software (col. 4, lines 30-33) and other states and events are implemented in hardware (col. 4, lines 28-30); and a scheduler means coupled to the finite state machine (Fig. 3, **state table 80**) and having one or more parameters registers defining scheduled operations to be performed by the scheduler (col. 4, lines 41-44), wherein the finite state machine is configured to select one or more parameters to be used by said scheduler upon transition from a first state to a second state (col. 4, lines 34-38).

Regarding claims 2-6 and 21-25, Weaver teaches a look-up table means (Fig. 5, look-up table incorporated into scheduler) for storing a look-up table that comprises logic having a current state value (col. 4, lines 53-56), event values and next state values associated with the current state value (col. 5, lines 28-34); and look-up table means for predefined actions (col. 4, lines 62-67; col. 5, lines 13); and one action is the transmission of a data packet (col. 4, lines 46-54; col. 5, lines 61-66); and decode means for decoding an action signal generated in response to the selection of a predefined action (col. 5, lines 61-66).

5. Claims 13 – 15 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Fung et al. (US 6,243,778).

Regarding claim 13, Fung teaches a method of defining a protocol stack based on a plurality of states, events and actions (col. 7, lines 43-54), the events and actions defining transitions between each of the states (col. 6, lines 1-7); and partitioning the states, events and action between hardware and software (col. 5, lines 34-41), based on a minimum defined performance criterion for said protocol stack (col. 4, lines 52-67).

Regarding claim 14, Fung teaches the configuration of states, events and actions by using a look-up table (col. 11, lines 15-24).

Regarding claims 15 and 19, Fung teaches state transitions partitioned in hardware when a relatively higher response time is required (col. 5, lines 45-49) and the hardware is an application-specific integrated circuit (col. 5, lines 45-47) and software is executed in a host processor environment (Fig. 2, **serial bus management 40**).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 8-10 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver (US 6,526,066), in view of Evoy et al. (US 5,953,741).

Regarding claims 8-10 and 27-29, Weaver teaches a scheduler comprising parameter registers.

Weaver fails to teach parameter registers receiving new parameters from a host processor environment; parameter register configured to receive a selection signal and a period counter.

However, Evoy teaches new parameters loaded from a host processor environment (col. 11, lines 25-34; stack cache 76 represent new parameters loaded from host processor 40). Evoy also teaches parameter registers configured to receive a selection signal (Fig. 2) from finite state machine means (**DMA unit 72**, col. 10, lines 64-66; col. 11, lines 6-24), the selection signal identifying which parameter to use when performing the scheduled operations (col. 11, lines 25-42); and a period counter means configured to identify a beginning and an end of a period (col. 8, lines 34-38), the period being defined by a period parameter (col. 8, lines 39-42).

In view of this, having the system of Weaver and then given the teaching of Evoy, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Weaver, by including new parameters, a selection signal and a period counter, so as to provide flexibility during scheduled operations and record the number of occurrences of a particular event.

8. Claims 11,12,30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weaver in view of Weeber (US 6,449,292).

Regarding claims 11,12,30 and 31, Weaver teaches a system comprising a finite state machine and a scheduler.

Weaver fails to teach a slot counter and look-up table actions triggered by a signal transmitted to the slot counter.

However, Weeber teaches a slot counter means configured to identify a beginning and an end of each timeslot within a period (col. 4, lines 18-31) and to transmit a signal identifying each timeslot to a look-up table unit (col. 4, lines 31-33; Fig. 3, look-up table unit represented by RAM 20); and a look-up table including one or more predefined actions (col. 4, lines 28-31), the actions being triggered by the signal transmitted by the slot counter (Fig. 3, signals 4 and 4a).

In view of this, having the system of Weaver and then given the teaching of Weeber, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Weaver, by incorporating a slot counter and look-up table into the system, so as to record the number of occurrences of a particular event within a given period.

9. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fung in view of Durian et al. (US 2002/0025832).

Regarding claims 16 and 17, Fung teaches a protocol stack based on a plurality of state, events and actions.

Fung fails to teach a time-division duplexing ("TDD") wireless protocol and Bluetooth protocol.

However, Durian teaches a time-division duplexing ("TDD") wireless protocol and Bluetooth standard (paragraph 40).

In view of this, having the system of Fung and then given the teaching of Durian, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Fung, by incorporating TDD and Bluetooth protocol into the system, in order to utilize a full duplex communication using a frequency hopping technique that will lesson interference during packet transmission.

Allowable Subject Matter

10. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 18, prior art does not teach moving a protocol stack from a first host environment to a second host environment, where the states, events and actions are repartitioned between hardware and software in the second host environment based on the second host environment's host processor capabilities.

Conclusion


11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are cited: Packet-Based Direct Memory Access, Pan et al, US 6,766,383; Service Level Executable Environment For Integrated PSTN and IP Networks and Call Processing Language Therefor, Butler et al, US 2003/0161296; Timing-Insensitive Glitch-Free Logic System and Method, Tseng et al, US 6,321,366.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda L Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 8:00 - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

rlm


RICKY NGO
PRIMARY EXAMINER